



AUSA 2016 Global Force Symposium and Exposition
15 - 17 March 2016
Von Braun Center (VBC)
Huntsville, AL

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Combat Vehicle Modernization Strategy (CVMS)



Why do we need it?

Threats to Army combat vehicles are growing rapidly. Nations are modernizing conventional armored forces. Combat vehicles across the world are nearing or surpassing parity with U.S. vehicles.





What are the Problems?



Current Capability

- **IBCT:** Can move quickly by strategic lift, but unable to *maneuver* upon arrival
- **SBCT:** Mobile upon arrival, but lacks the *lethality* to exploit its mobility advantage.
- **ABCT:** Maneuver capable, but *pace of improvement* lags threat evolution and tech innovation

Desired Capability

- Combat Vehicles Provide required combinations of mobility, protection and lethality
 - Overmatch threat – Joint **Combined Arms Maneuver**
 - Strategic Deployability and Sustainability – **Expeditionary Maneuver**
 - Autonomous systems and platforms – manage risk

Capability Delta and Risk

- Without IBCT ***maneuver*** capability, US forces cannot execute forcible entry under various threat scenarios
- Without sufficient ***lethality and range***, SBCTs are vulnerable to defeat by some contemporary hybrid/insurgent enemies
- Without advances in vehicle ***protection***, proliferating weapons challenge the ABCT differential

Priorities

- **Tactical Mobility IBCT**
- **Stryker Lethality upgrades missile/cannon**
- **Mobile protected firepower IBCT/SBCT**
- **Replace obsolete vehicles ABCT**
- **Develop advanced and autonomous solutions ABCT/SBCT**

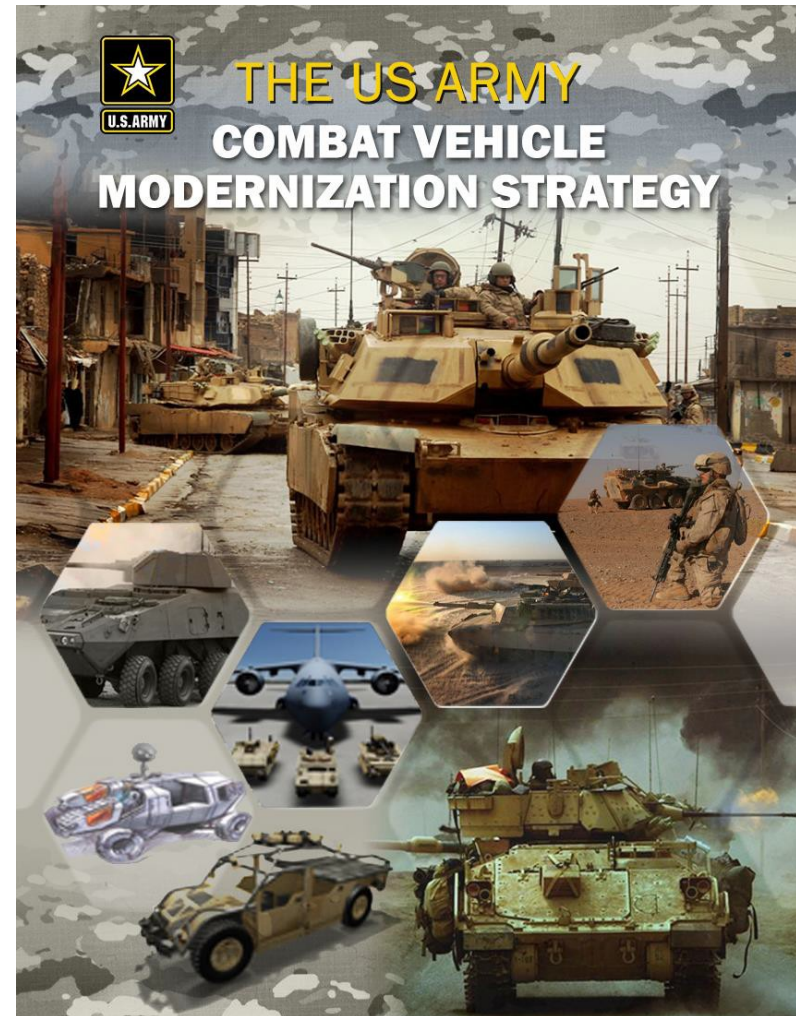


Combat Vehicle Modernization Strategy (CVMS)



What is it?

The CVMS establishes the ends, ways and means to modernize Army combat vehicles in the near-, mid- and far- terms to meet the mobility, protection and lethality capability requirements of future Army formations.





Combat Vehicle Modernization Strategy (CVMS)



What will it give us?

Combat vehicle modernization efforts must design combat vehicles to protect Soldiers against threats and deliver precision lethality, while providing both tactical mobility and global responsiveness.





Combat Vehicle Modernization Strategy (CVMS)



How do we get it?

The Army must simultaneously pursue short-term solutions for current challenges while developing new capabilities over the mid- to long- terms to ensure overmatch in future missions.



Combat Vehicle Modernization Strategy (CVMS)



When do we get it?

Timeframes:

Near	Mid	Far
2016-2021	2022-2031	2032-2046





Infantry Brigade Combat Team (IBCT)



CVMS IBCT Elements

- **Primary Systems**
 - Ground Mobility Vehicle (GMV)
 - Mobile Protected Firepower (MPF)
 - Light Reconnaissance Vehicle (LRV)
 - Autonomous Technology applications
- **Enabling Systems**
 - Vehicle Protection System (VPS)
 - Cannon Air Burst Technology
 - Combat Vehicle Prototyping (CVP)



IBCT Capability Transition



Near

Mid

Far

"SIDRA"

Sustain

Improve

Develop

Replace

Assess

Current fleet

Reduction of Soldier load

New systems

Obsolete systems

Evaluate effectiveness

-IBCT
-9-man Squad

-Ground Mobility Vehicle

-Light Recon Vehicle
-Mobile Protected Firepower

-M1151 (HMMWV)

-JLTV as LRV
- Expeditionary Maneuver



M1151A1 MK-19



M1151A1 .50 CAL



M1151A1 TOW/ITAS



Ground Mobility Vehicle (GMV)



Light Reconnaissance Vehicle (LRV)



Mobile Protected Firepower (MPF)
Commercial Off the Shelf (COTS)



Mobile Protected Firepower (MPF)
Developmental

**S&T, RDECOM,
Combat Vehicle Prototyping
(CVP)**

Track & Suspension

Lightweight Structures

Weapon Systems

Architecture

Blast Migration

MAPS

Story Starts Here!



Stryker Brigade Combat Team (SBCT)



CVMS SBCT Elements

- **Primary Systems**
 - Stryker Family of Systems (FoS)
 - Double “V” Hull Upgrade
 - Stryker Mobile Gun System (MGS)
- **Enabling Systems**
 - Engineer Change Proposal (ECP)
 - Lethality Up-Grade (Medium Caliber Cannon, Remote Weapon Station, Javelin (RWS-J))
 - Vehicle Protection System (VPS)
 - Combat Vehicle Prototyping (CVP)



SBCT Capability Transition



Near

Mid

Far

"SIDRA"

Sustain

Current fleet
ECPs

Improve

Engineer
Change
Proposals

Develop

New
systems,
Combat
Vehicle
Prototyping

Replace

Obsolete
systems

Assess

Evaluate
effectiveness

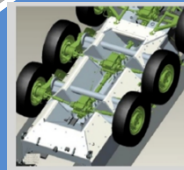
-SBCT
Fleet Recap

-Stryker
DVH
-Stryker
Lethality

-VPS
-MPF

-Flat bottom
fleet

-MGS
-SBCT
Maneuver



M1126 DVH



M1126 30mm Cannon



M1126 RWS-J



Mobil Protected Firepower (MPF)

S&T, RDECOM,
Combat Vehicle Prototyping
(CVP)

Track & Suspension



Lightweight Structures



Architecture



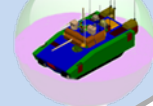
Blast Migration



Weapon Systems



MAPS





Armored Brigade Combat Team (ABCT)



CVMS ABCT Programs and Initiatives

- Primary Systems
 - Abrams Main Battle Tank (M1A2SEP)
 - Bradley Family of Systems (M2A3/4)
 - Armored Multi-Purpose Vehicle (AMPV)
 - Future Fighting Vehicle (FFV)
 - Future Tank (FT)
 - Autonomous Technology applications
- Enabling Systems
 - Engineer Change Proposals (ECP)*
 - Vehicle Protection System (VPS)
 - Medium Caliber Canon
 - Combat Vehicle Prototyping (CVP)
 - 120mm Advanced Multi-Purpose Round

**An engineering change proposal is a limited improvement on a combat system that does not require development and approval of a new requirement. ECPs are limited to returning combat vehicles to the original required level of capability, but are faster and less costly than full modernization efforts.*



ABCT Capability Transition



Near

Mid

Far

"SIDRA"

Sustain

Improve

Develop

Replace

Assess

Current fleet (ECPs)

Technology improvements

New systems

Obsolete systems

Evaluate effectiveness

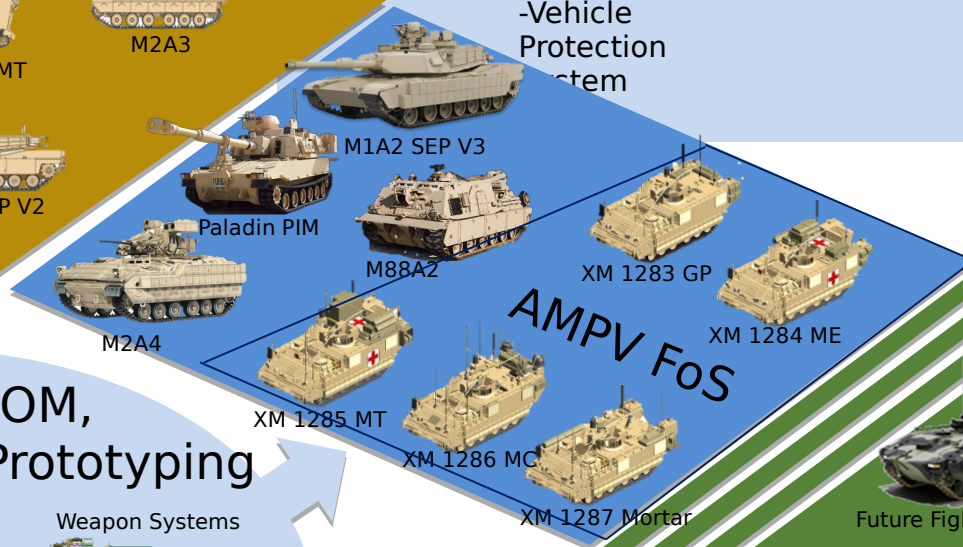
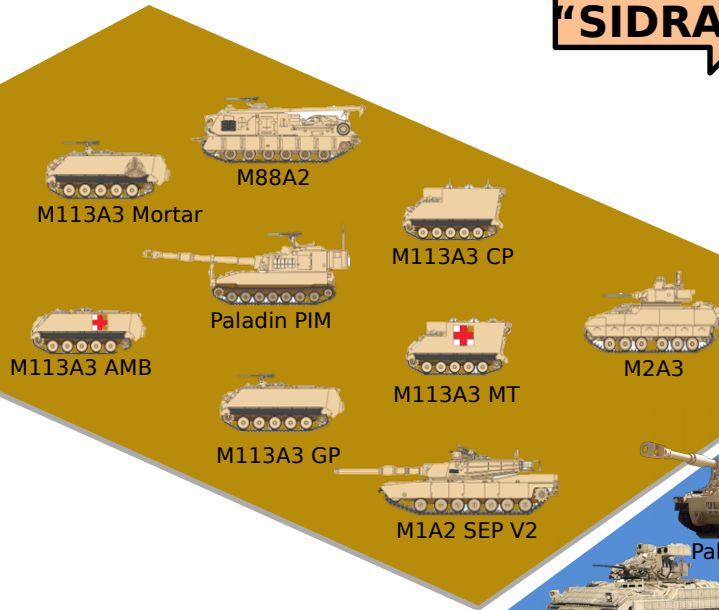
-Abrams
-Bradley
-Stryker
-Hercules

-3rd GEN FLIR
-120mm AMP
-Vehicle Protection System

-AMPV
-FFV
-Future Tank

-M113

-Abrams
-Bradley
-Paladin
-Hercules



AMPV FoS

S&T, RDECOM, Combat Vehicle Prototyping (CVP)

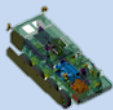
Track & Suspension



Lightweight Structures



Architecture



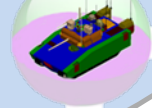
Blast Migration



Weapon Systems



MAPS



Future Fighting Vehicle



Future Tank



Robotic Wingman

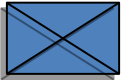

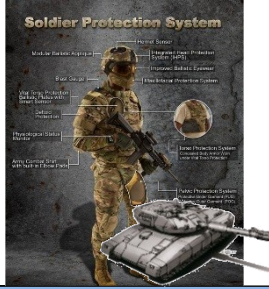


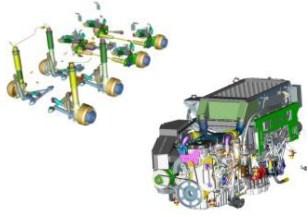
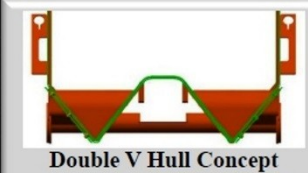



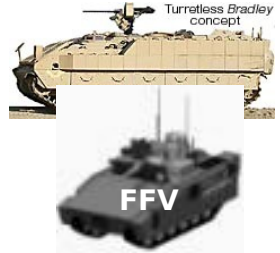

Story Starts Here!



Combat Vehicle Modernization



Formations possess the appropriate combination of mobility, protection and lethality to win or achieve overmatch against likely threat, under anticipated mission variables

IBCT	Mobility	Protection	Lethality
			
SBCT	Mobility	Protection	Lethality
			
ABCT	Mobility	Protection	Lethality
			

Priorities

- Tactical Mobility (near)
- Light recon and security capability (near)
- Mobile protected firepower (near)
- Protection and power upgrades (near)
- Lethality upgrades missile, cannon (mid)
- Mobile protected firepower (mid)
- Replace obsolete vehicles (near)
- Future Fighting Vehicle (mid)
- Future tank / autonomous capabilities (far)

Residual Risk



Back-up